IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of :

Kenji OSHIMA : Docket No. 2001-1135A

Serial No. 09/935,661 : Group Art Unit 1714

Filed August 24, 2001 : Examiner Callie E. Shosho

ELECTROSTATIC INK JET INK AND
METHOD OF CNTROLLING ELECTROSTATIC
CHARGES OF COLOR MATERIAL IN THE INK

DECLARATION UNDER 37 C.F.R. 1.132

Comissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Kenji OSHIMA declare as follows:

1. I graduated a Applied Chemistry course of the Faculty of Engineering of Kyushu Institute of Technology in March 31, 1992.

2. I entered employment with Matsushita Electric Industrial Company, Limited in April 1, 1992. I have studied in the areas of Ink Jet Ink from 1995.

3. I have studied the above-identified application Serial No. 09/935,661, the Office Action therein dated December 9, 2004, and the references relied upon by the Examiner in rejecting the claim.

4. In order to support the patentability of the presently claimed invention, I presented the attached Test Report. The experiments set forth therein were conducted by me or under my supervision and control.

5. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the above-identified application or any patent issued thereon.

Date February 23, 2005 Declarant Kenji Oshima

Test Report

1. Purpose:

This test was conducted to show if conventional lithographic inks can be applicable to an ink for a conventional ink jet printing head.

2. Experimental and results:

(1) Preparation of the lithographic ink.

A lithographic ink, having a viscosity of 30,000 - 300,000 mPa·s, supplied by TOYO INK MFG. CO. LTD. was prepared.

(2) Loading of the ink into an ink jet head:

The above ink could not be loaded via a tube having a diameter of 4 mm, that connects an ink reservoir and the ink jet head, into the ink jet head.

Then the ink was forcibly put into a back side of the ink jet head using a spatula, however, the ink did not reach to a nozzle of the ink jet head.

(3) Ejection ability of the ink from a hollow metal needle:

A hollow metal needle having nearly a same cross sectional area with a cross sectional area of the ink jet nozzle was attached to a syringe. Then the ink was put into the syringe using a spatula, and the ink were pressurized by a piston at a pressure two times greater than an atmospheric pressure. The pressure was applied by reducing the space in the syringe into half of the initial volume.

As a result, no ink was ejected from a tip of the hollow metal needle.

3. Conclusion:

It became obvious from the experiment conducted, the commercially available lithographic inks could not be used in an ink jet head, because, they could not be introduced into the ink jet head by a usual means, they could not reached to the nozzle even when they were forcibly put into a back side of the ink jet head, and they could not be ejected from a nozzle having nearly a same cross sectional area with that of an ink jet nozzle.